

Asymmetrical Hilar Enlargement in an Asymptomatic Patient

Feng Poh^{1*} and Mon Ben Chow²

¹Department of Diagnostic Radiology, Singapore General Hospital, Singapore

²Khoo Teck Puat Hospital, Singapore

*Corresponding author: Feng Poh, Department of Diagnostic Radiology, Singapore General Hospital, Singapore, Email: pohfeng@gmail.com

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Description

36 year old asymptomatic gentleman with a chest radiograph done for health screening and incidental finding of a harsh systolic murmur at the left sternal region on chest auscultation.

Question: Based on the patient's history, physical examination and chest radiograph, which one of the following is the most likely diagnosis?

- Pulmonary embolism
- Atrial septal defect
- Pulmonary hypertension
- Pulmonary stenosis
- Right pulmonary artery hypoplasia.

Imaging Findings

There is enlarged left hilum secondary to enlargement of the main and left pulmonary artery compared to the normal right pulmonary artery. Heart size and peripheral pulmonary vasculature are normal in appearance.

Discussion

The answer is "Pulmonary stenosis" shown in Figure 1.



Asymmetric unilateral enlargement of the left pulmonary artery is highly suggestive of pulmonary stenosis, especially in the appropriate clinical context i.e findings of a heart murmur on cardiac assessment. This appearance is attributed to the stenotic jet stream, which is preferentially directed towards the left pulmonary artery and which results in focal post-stenotic dilatation where the jet impacts the left pulmonary arterial wall. In some cases, enlargement of the main pulmonary artery can also be appreciated, as well as right ventricular enlargement in severe cases. Asymmetric enlargement of the left compared with the normal right pulmonary artery is the "auntminnie" characteristic of this condition.

A large central pulmonary embolus in the left main pulmonary artery can also produce asymmetric pulmonary blood flow leading to unilateral enlargement i.e Fleischner sign; however, absence of other radiographic features such as wedge-shaped focal infarcts (Hamptom hump) and oligemia (Westermark sign) in an asymptomatic individual makes this an unlikely diagnosis [1,2].

Hypoplasia of the right pulmonary artery may be considered in view of the asymmetry. However, pulmonary artery hypoplasia is classically associated with lung hypoplasia and possibly dextroversion or anomalous pulmonary venous trunk in cases of Scimitar syndrome; a normal appearing right lung excludes this diagnosis. Pulmonary artery hypertension might be worth considering if there had been symmetric enlargement of bilateral pulmonary arteries with pruning of the peripheral vessels, which are not demonstrated in this case. Left to right shunts such as atrial septal defects (ASD) cause pulmonary plethora and enlargement of all the pulmonary vessels, which is again, not demonstrated in this case.

Conclusion

Asymmetric enlargement of the left pulmonary artery is highly suggestive of pulmonary stenosis and should prompt further cardiac evaluation in an asymptomatic individual.

References

- 1. Steiner RM, Reddy GP, Flicker S (2002) Congenital cardiovascular disease in the adult patient: imaging update. J Thorac Imaging 1: 1-17.
- 2. Latson LA (2001) Critical pulmonary stenosis. J Interv Cardiol 14: 345-350.